



**REQUEST FOR PROPOSAL [RFP] –
SUPPLY, INSTALL AND COMMISSION ALKANSTRAND A & C-LINE PROGRAMMABLE LOGIC
CONTROLLERS, CENTRAL CONTROL ROOM SCADA SYSTEM AND SCADA INTELLIGENCE
IMPLEMENTATION AT NSEZI WTW ON EXISTING SCADA.**

MHLATHUZE WATER

RFP CONTRACT NO:	MW/20/11/2022/2023
ISSUE DATE:	22 November 2022
BRIEFING DATE	30 November 2022
TIME	12H30
CLOSING DATE:	14 December 2022
CLOSING TIME:	12:00 PM
BID VALIDITY PERIOD:	180 Days from Closing Date

MHLATHUZE WATER
CONTRACT NO. MW/20/11/2022/2023
SUPPLY, INSTALL AND COMMISSION ALKANSTRAND A & C-LINE PROGRAMMABLE LOGIC
CONTROLLERS, CENTRAL CONTROL ROOM SCADA SYSTEM AND SCADA INTELLIGENCE
IMPLEMENTATION AT NSEZI WTW ON EXISTING SCADA.

TENDER SUBMITTED BY:

Company Name: _____

Contact Person: _____

Physical Address: _____

Postal Address: _____

Contact No. _____

Email: _____

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SCHEDULE OF BID DOCUMENTS

SECTION 1: SBD1 FORM

PART A
INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS SUPPLY, INSTALL AND COMMISSION ALKANSTRAND A & C-LINE PROGRAMMABLE LOGIC CONTROLLERS, CENTRAL CONTROL ROOM SCADA SYSTEM AND SCADA INTELLIGENCE IMPLEMENTATION AT NSEZI WTW ON EXISTING SCADA.					
BID NUMBER:	MW/20/11/2022/2023	ISSUE DATE: 21NOVEMBER 2022	CLOSING DATE: 14 DECEMBER 2022	CLOSING TIME:	12h00
DESCRIPTION	SUPPLY, INSTALL AND COMMISSION ALKANSTRAND A & C-LINE PROGRAMMABLE LOGIC CONTROLLERS, CENTRAL CONTROL ROOM SCADA SYSTEM AND SCADA INTELLIGENCE IMPLEMENTATION AT NSEZI WTW ON EXISTING SCADA.				
SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		OR	CENTRAL SUPPLIER DATABASE	UNIQUE REGISTRATION REFERENCE NUMBER: MAAA
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE	TICK APPLICABLE BOX] <input type="checkbox"/> Yes <input type="checkbox"/> No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT		[TICK APPLICABLE BOX] <input type="checkbox"/> Yes <input type="checkbox"/> No

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[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED FOR PURPOSES OF COMPLIANCE WITH THE B-BBEE ACT]			
1 ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES ENCLOSE PROOF]	2 ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES, ANSWER QUESTIONNAIRE BELOW]
QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS			
IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? <input type="checkbox"/> YES <input type="checkbox"/> NO DOES THE ENTITY HAVE A BRANCH IN THE RSA? <input type="checkbox"/> YES <input type="checkbox"/> NO DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? <input type="checkbox"/> NO <input type="checkbox"/> YES DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? NO <input type="checkbox"/> YES <input type="checkbox"/> IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? <input type="checkbox"/> YES <input type="checkbox"/> NO			
IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 1.3 BELOW.			

PART B
TERMS AND CONDITIONS FOR BIDDING

1. TAX COMPLIANCE REQUIREMENTS
1.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS. 1.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS. 1.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE WWW.SARS.GOV.ZA. 1.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID. 1.5 IN BIDS WHERE UNINCORPORATED CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER. 1.6 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.

NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.

SIGNATURE OF BIDDER:

CAPACITY UNDER WHICH THIS BID IS SIGNED:

(Proof of authority must be submitted e.g. company resolution)

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SECTION 2: NOTICE TO BIDDERS

1 INVITATION TO BID

Responses to this RFP [hereinafter referred to as a **Bid** or a **Proposal**] are requested from persons, companies, close corporations or enterprises [hereinafter referred to as an **entity, Respondent** or **Bidder**].

DESCRIPTION	SUPPLY, INSTALL AND COMMISSION ALKANSTRAND A & C-LINE PROGRAMMABLE LOGIC CONTROLLERS, CENTRAL CONTROL ROOM SCADA SYSTEM AND SCADA INTELLIGENCE IMPLEMENTATION AT NSEZI WTW ON EXISTING SCADA.
TENDER ADVERT	All Mhlathuze Water tenders are advertised on the National Treasury's e-Tender Publication Portal Should one of these media (i.e. National Treasury's e-Tender Publication Portal or Mhlathuze Water website) not be available, bidders are advised to check on the other media for advertised tenders.
COMMUNICATION	Any addenda to the RFP or clarifications will be published on the e-tender portal and Mhlathuze Water website. Bidders are required to check the e-tender portal prior to finalising their bid submissions for any changes or clarifications to the RFP. Mhlathuze Water will not be held liable if Bidders do not receive the latest information regarding this RFP with the possible consequence of either being disadvantaged or disqualified as a result thereof.
BRIEFING SESSION	Compulsory briefing 30 November 2022, Social Lap MHLATHUZE WATER: Cnr. South Central Arterial & Battery Bank, Alton, Richards Bay, 3900
CLOSING DATE	14 December 2022, 12:00 pm on Friday, MHLATHUZE WATER: Cnr. South Central Arterial & Battery Bank, Alton, Richards Bay, 3900
VALIDITY PERIOD	180 Days from Closing Date Bidders are to note that they may be requested to extend the validity period of their bid, at the same terms and conditions, if the internal evaluation process has not been finalised within the validity period. However, once the adjudication body has approved the process and award of the business to the successful bidder(s), the validity of the successful bidder(s)' bid will be deemed to remain valid until a final contract has been concluded.

Any additional information or clarification will be published on the e-Tender portal and Mhlathuze Water website, if necessary.

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2 RFP INSTRUCTIONS

- 2.1 Please sign documents [sign, stamp and date the bottom of each page] before uploading them on the system. The person or persons signing the submission must be legally authorised by the respondent to do so.
- 2.2 **All returnable documents tabled in the Proposal Form must be returned with proposals.**
- 2.3 Unless otherwise expressly stated, all Proposals furnished pursuant to this RFP shall be deemed to be offers. Any exceptions to this statement must be clearly and specifically indicated.
- 2.4 Any additional conditions must be embodied in an accompanying letter. Subject only to clause 15 [Alterations made by the Respondent to Bid Prices] of the General Bid Conditions, paragraph 12 below (Legal Review) and Section 6 of the RFP, alterations, additions or deletions must not be made by the Respondent to the actual RFP documents.

3 JOINT VENTURES OR CONSORTIUMS

Respondents who would wish to respond to this RFP as a Joint Venture [**JV**] or consortium with B-BBEE entities, must state their intention to do so in their RFP submission. Such Respondents must also submit a signed JV or consortium agreement between the parties clearly stating the percentage [%] split of business and the associated responsibilities of each party. If at the time of the bid submission such a JV or consortium agreement has not been concluded, the partners must submit confirmation in writing of their intention to enter into a JV or consortium agreement should they be awarded business by Mhlathuze Water through this RFP process. This written confirmation must clearly indicate the percentage [%] split of business and the responsibilities of each party. In such cases, award of business will only take place once a signed copy of a JV or consortium agreement is submitted to Mhlathuze Water.

Respondents are to note that for the purpose of Evaluation, a JV will be evaluated based on one consolidated B-BBEE score card (a consolidated B-BBEE Status Level verification certificate) as per the B-BBEE Preferential Procurement Regulations, 2017 preference point scoring.

4 COMMUNICATION

- 4.1 For specific queries relating to this RFP, an RFP Clarification Request Form should be submitted onto the system and to Sihle Mndaweni, 035 902 1062] before **12:00 pm on 02 December 2022** substantially in the form set out in Section 8 hereto. In the interest of fairness and transparency, Mhlathuze Water response to such a query will be published on the e-tender portal and Mhlathuze Water website.
- 4.2 After the closing date of the RFP, a Respondent may only communicate with the name of delegated individual (Mr Sihle Mndaweni), at telephone number 035 902 1037, email tenders@mhlathuze.co.za on any matter relating to its RFP Proposal.

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- 4.3 Respondents are to note that changes to its submission will not be considered after the closing date.
- 4.4 It is prohibited for Respondents to attempt, either directly or indirectly, to canvass any officer or employee of Mhlathuze Water in respect of this RFP between the closing date and the date of the award of the business.
- 4.5 Respondents found to be in collusion with one another will be automatically disqualified and restricted from doing business with organs of state for a specified period.

5 CONFIDENTIALITY

All information related to this RFP is to be treated with strict confidence. In this regard Respondents are required to certify that they have acquainted themselves with the Non-Disclosure Agreement. All information related to a subsequent contract, both during and after completion thereof, will be treated with strict confidence. Should the need however arise to divulge any information related to this RFP or the subsequent contract, written approval must be obtained from Mhlathuze Water.

6 COMPLIANCE

The successful Respondent [hereinafter referred to as the **SUPPLY, INSTALL AND COMMISSION ALKANSTRAND A & C-LINE PROGRAMMABLE LOGIC CONTROLLERS, CENTRAL CONTROL ROOM SCADA SYSTEM AND SCADA INTELLIGENCE IMPLEMENTATION AT NSEZI WTW ON EXISTING SCADA** shall be in full and complete compliance with any and all applicable laws and regulations.

7 EMPLOYMENT EQUITY ACT

Respondents must comply with the requirements of the Employment Equity Act 55 of 1998 applicable to it including (but not limited to) Section 53 of the Employment Equity Act.

8 DISCLAIMERS

Respondents are hereby advised that Mhlathuze Water is not committed to any course of action as a result of its issuance of this RFP and/or its receipt of Proposals. In particular, please note that Mhlathuze Water reserves the right to:

- 8.1 Modify the RFP's Goods/Services and request Respondents to re-bid on any such changes;
- 8.2 Reject any Proposal which does not conform to instructions and specifications which are detailed herein;
- 8.3 Disqualify Proposals submitted after the stated submission deadline [closing date];
- 8.4 Award a contract in connection with this Proposal at any time after the RFP's closing date;
- 8.5 Award a contract for only a portion of the proposed Goods/Services which are reflected in the scope of this RFP;
- 8.6 Split the award of the contract between more than one Supplier/Service provider, should it at Mhlathuze Water discretion be more advantageous in terms of, amongst others, cost or developmental considerations;
- 8.7 Cancel the bid process;
- 8.8 Validate any information submitted by Respondents in response to this bid. This would include, but is not limited to, requesting the Respondents to provide supporting evidence. By submitting a bid, Respondents hereby irrevocably grant the necessary consent to Mhlathuze Water to do so;

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- 8.9 Request audited financial statements or other documentation for the purposes of a due diligence exercise;
- 8.10 Not accept any changes or purported changes by the Respondent to the bid rates after the closing date and/or after the award of the business, unless the contract specifically provided for it;
- 8.11 To cancel the contract and/request that National Treasury place the Respondent on its Database of Restricted Suppliers for a period not exceeding 10 years, on the basis that a contract was awarded on the strength of incorrect information furnished by the Respondent or on any other basis recognised in law;
- 8.12 To award the business to the next ranked bidder, provided that he/she is still prepared to provide the required Goods/Services at the quoted price, should the preferred bidder fail to sign or commence with the contract within a reasonable period after being requested to do so. Under such circumstances, the validity of the bids of the next ranked bidder(s) will be deemed to remain valid, irrespective of whether the next ranked bidder(s) were issued with a Letter of Regret. Bidders may therefore be requested to advise whether they would still be prepared to provide the required Goods/Services at their quoted price, even after they have been issued with a Letter of Regret.

Note that Mhlathuze Water will not reimburse any Respondent for any preparatory costs or other work performed in connection with its Proposal, whether or not the Respondent is awarded a contract.

9 LEGAL REVIEW

A Proposal submitted by a Respondent will be subjected to review and acceptance or rejection of its proposed contractual terms and conditions by Mhlathuze Water Legal Counsel, prior to consideration for an award of business. A material deviation from the Standard terms or conditions could result in disqualification.

10 SECURITY CLEARANCE

Acceptance of this bid could be subject to the condition that the Successful Respondent, its personnel providing the Goods/Services and its subcontractor(s) must obtain security clearance from the appropriate authorities to the level of **CONFIDENTIAL/ SECRET/TOP SECRET**. Obtaining the required clearance is the responsibility of the Successful Respondent. Acceptance of the bid is also subject to the condition that the Successful Respondent will implement all such security measures as the safe performance of the contract may require.

11 NATIONAL TREASURY'S CENTRAL SUPPLIER DATABASE

Respondents are required to self-register on National Treasury's Central Supplier Database (CSD) which has been established to centrally administer supplier information for all organs of state and facilitate the verification of certain key supplier information. Respondents must register on the CSD prior to submitting their bids. Business may not be awarded to a Respondent who has failed to register on the CSD. Only foreign suppliers with no local registered entity need not register on the CSD.

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For this purpose, the attached SBD 1 form must be completed and submitted as a mandatory returnable document by the closing date and time of the bid.

12 TAX COMPLIANCE

Respondents must be compliant when submitting a proposal to Mhlathuze Water and remain compliant for the entire contract term with all applicable tax legislation, including but not limited to the Income Tax Act, 1962 (Act No. 58 of 1962) and Value Added Tax Act, 1991 (Act No. 89 of 1991).

It is a condition of this bid that the tax matters of the successful Respondents be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the Respondents tax obligations. The Tax Compliance status requirements are also applicable to foreign Respondents/ individuals who wish to submit bids.

Where Consortia / Joint Ventures / Sub-contractors are involved, each party must be registered on the Central Supplier Database and their tax compliance status will be verified through the Central Supplier Database.

<p>Mhlathuze Water urges its clients, suppliers and the general public to report any fraud or corruption to TIP-OFFS ANONYMOUS: 0800 204 310</p>

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SECTION 3: BACKGROUND, OVERVIEW AND SCOPE OF REQUIREMENTS

Mhlathuze Water (MW) is a water board, established in terms of the Water Services Act, 1997 (Act No. 108 of 1997). Its core operations concern the supply of bulk water and the disposal of bulk waste water. It is a State Owned Entity listed in Schedule 3B of the Public Finance Management Act, 1999 (PFMA) (Act No. 1 of 1999). Mhlathuze Water invites Tenderers to submit bids for **SUPPLY, INSTALL AND COMMISSION ALKANSTRAND A & C-LINE PLCS, CENTRAL CONTROL ROOM SCADA SYSTEM AND SCADA INTELLIGENCE IMPLEMENTATION AT NSEZI WTW ON EXISTING SCADA**

3.1 OBJECTIVE

The need for a Service Provider to **SUPPLY, INSTALL AND COMMISSION ALKANSTRAND A & C-LINE PLCS, CENTRAL CONTROL ROOM SCADA SYSTEM AND SCADA INTELLIGENCE IMPLEMENTATION AT NSEZI WTW ON EXISTING SCADA** is to address the following:

- Automate entire A-Line pump station which is manually operated and must include sea water abstraction penstocks
- Install panel mount industrial PC with Adroit SCADA application for A-Line local control
- Install 4 X 250kW, 380VAC, 400A ABB VSDs to drive A-line pumps or equivalent for energy efficiency purposes
- Replace C-Line PLC with Rockwell PLC or equivalent
- Replace C-Line HMI with panel mount industrial PC with SCADA application
- Replace all C-Line 4 X Operator consoles with 2 X panel mount industrial PC with SCADA application to cater for 2 pumps each.
- Install and commission SCADA system in the central control room similar to other Mhlathuze Water installations to bridge the skills gap within Automation section and plant Operators
- Implement SCADA intelligence at Nsezi WTW on existing SCADA system
- Generation of custom made reports in both WWDS and Nsezi WTW

3.1.1 CONTRACT DURATION

The contract is for the period of **12 months after appointment** subject to performance agreement to be entered into between the service provider and the employer. Extension will only be granted upon request when the equipment's ETA is longer than 8 months and the proof is submitted.

3.1.2 DESCRIPTION OF WORK

3.1.2.1 A-LINE PLC

This section of the Contract covers the detailed design, supply, installation, testing and commissioning, of the following Electronic equipment:

The Contractor shall design and produce his own detailed designs and associated drawings following his field assessments for review and approval by the Project Manager.

The Contractor shall then produce detailed construction designs and drawings for review and approval by the Project Manager. Following the installation, the Contractor shall produce all as-built design and documentation

Reviews and approvals shall be managed by the Contractor using a reliable and auditable document and drawing management system as per ISO 9001

The Contractor shall be wholly responsible for the detailed design of the Electrical and Electronic plant and equipment to be supplied under this Contract.

PLC programming language shall be Ladder Logic and Function Block Diagram where sequences and PID control is involved.

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3.1.2.2 C-LINE PLC

This section of the Contract covers the detailed design, supply, installation, testing and commissioning, of the following Electronic equipment:

The Contractor shall designs and produce his own detailed designs and associated drawings following his field assessments for review and approval by the Project Manager.

The Contractor shall then produce detailed construction designs and drawings for review and approval by the Project Manager. Following the installation, the Contractor shall produce all as-built design and documentation

Reviews and approvals shall be managed by the Contractor using a reliable and auditable document and drawing management system

The Contractor shall be wholly responsible for the detailed design of the Electrical and Electronic plant and equipment to be supplied under this Contract.

PLC programming language shall be Ladder Logic and Function Block Diagram where sequences and PID control is involved.

3.1.2.3 CENTRAL CONTROL ROOM SCADA

A Locally supported SCADA system (Adroit or equivalent) with a minimum number of 7500 scan points to be supplied, installed, configured and commissioned in the Central control room to incorporate all 3 X pump stations at the Waste Water Disposal Scheme. Remote start to be provisional made and be password protected as per user categories to ensure equipment safety.

3.1.2.4 NSEZI WATER TREATMENT PLANT SCADA INTELLIGENCE IMPLEMENTATION

The following is required at Nsezi water treatment plat:

- An upgrade of existing Adroit SCADA version 8.4.2.8 to the latest version is required.
- Configuration of spare servers into hot standby server and historian
- Installation of SCADA intelligence package
- Fully automation of the water treatment plant and chemical dosing as per end user requirement document, which will be issued to the successful bidder.
- Implementation of custom made reports for chemical usage, reservoir levels, daily volumes, etc.
- Properly configuration of plant critical alarms

3.1.2.5 DATA TO BE SUPPLIED BY SUCCESSFUL TENDERER

The Contractor shall produce and submit Electrical and Electronic Design Data Pack for approval by the Project Manager within **8 weeks** after award of contract and before procurement of any equipment.

A Project plan must be submitted by Contractor for Project Manager's approval, this must include all salient aspects of project schedule.

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The Electrical and Electronic Design Data Pack shall include all the requirements of Section 3.2.3 above and

- detailed equipment technical datasheets,
- fieldbus cable technical datasheets,
- detailed network drawings,
- cable schedules,
- termination schedules,
- calculations and
- Site location drawings for all electrical and electronic equipment.

In addition, the design data pack shall include all MCC GA's, Electrical Schematic drawings, Single Line Drawings and manufacturing drawings.

The Contractor shall submit manufacturing drawings to the Project Manager for approval for all equipment including MCCs. All documents and drawing must be approved by the Project Manager prior to ordering of any equipment and cables.

The Tenderer's attention is drawn to the fact that the site is restricted by virtue of the existing structures, buildings, pipelines, service ducts and cables. For this reason, timeous submission of correct and unambiguous information and details is of vital importance to the success of the project.

Any re-design and/or cutting or alteration of new Plant, equipment or building work arising from inadequate or incorrect dimensions and particulars afforded by the Contractor under this Contract, or through late receipt of any such particulars, and any modifications to existing structures to suit Plant supplied under this Contract will be arranged by the Project Manager to be carried out as he sees fit, at the expense of the Contractor under this Contract.

3.1.2.6 TESTING, COMPLETION, COMMISSIONING AND CORRECTION OF DEFECTS

3.1.2.6.1 Performance Tests

On completion of erection and installation the Contractor must carry out the following tests, where applicable, in addition to any other tests which may be specified elsewhere.

Inspections to be done by Project Manager:

Inspections of all MCCs supplied under this Contract will be carried out by the Project Manager during manufacture at the following holding points prior to delivery to Site:

- After sheet -metal fabrication and before painting
- After painting and before installation of equipment
- After assembly and before factory testing.

All cable trenches if applicable shall be inspected by the Project Manager prior to cables being laid, and after the cables have been laid, but prior to backfilling.

The minimum inspection of the PLC and HMI which is to be carried out by the Contractor and witnessed by the Project Manager or Employer's representative shall include the following:

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- Factory inspection of Main PLC Panel before release to site (other PLCs shall be incorporated into the relevant MCC compartments and inspections of these will be covered by the MCC factory inspection tests (FATs) which are covered in the Electrical Project Specification.)
- Correct choice of PLC CPU, Power supply and Input / Output cards to meet I/O list provided at tender stage. (calculations to be presented)
- Correct configuration of all Input and Output Cards (drawings to be presented)
- Correct wiring of all input and outputs to marshalling strips (cable block drawings to be presented)
- Code review of all PLC Control Logic (logic diagrams, flowcharts and associated printouts to be presented)
- SCADA and Industrial PC mimics, graphics and page layout

The preferred method of testing shall be using the actual PLCs that will be delivered to site set up in a simulated environment. Simulation of the process to be controlled shall be as simple and cost effective as possible.

Factory Acceptance Tests (FATs):

It is the intention that all FATs of all MCCs will be witnessed by the Project Manager and or the Employer's representative.

The Contractor shall make provision for simulation of all PLC and SCADA and industrial PC software and configuration and arrangement for the Project Manager and or an Employer's representative to inspect the software before it is released to site.

This will include:

- Correct operation of all control logic
- Correct operation of all modes of operation
- Correct detection and annunciation of simulated faults
- Correct inter PLC/ PLC data communication and response time measurement
- Correct inter PLC/Telemetry data communication and response time measurement
- Correct inter PLC/MPRs data communication and response time measurement
- PLC Cycle time measurement

Before Commissioning

Tests for correct mapping of all field signals and I/O to PLC

Test for correct communication between PLCs and VSDs, Electrical actuators, etc

Tests for correct direction of rotation of motors.

Tests for test for correct functionality of unit processes

LV Cables:

- Insulation resistance test (after jointing and termination)
- Phase rotation test (after jointing and termination)

Earthing

- Earth electrode resistance measurements
- Bonding conductor continuity tests

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3.1.3 SPECIFICATIONS FOR ELECTRICAL WORKS

Compliance to OHS Act no 85 of 1993

Compliance to SANS 10142

3.1.4 CERTIFICATE OF COMPLIANCE

On completion of the new installation, if applicable a certificate of compliance must be issued to Mhlathuze water in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993).

3.1.5 INFORMATION

The following must be noted:

- Factory Acceptance Test is must be catered for, for 3 Mhlathuze Water personnel to attend before VSDs are tested and ready for shipment.
- The cables between VSDs and Motors are not part of this project.

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3.2. TECHNICAL SPECIFICATION

3.2.1 SOFTWARE SPECIFICATIONS

3.2.1.1 PC Software

The SCADA servers and workstation computers shall be configured with the latest version of the Microsoft Operating System, supported by the OEM, as well as all relevant, up to date device drivers for security, peripherals, network and printers that are required.

The operating system shall provide robust system and user security, system monitoring and event logging functionality as well as application monitoring and failure recovery functionality. The operating system shall be plug-and-play compliant and shall include a remote update and maintenance facility. Diagnostic and regular self-maintenance functionality shall be configured and enabled on the system.

The operating system for any database servers that are supplied shall provide a software implementation of RAID (Redundant Array of Inexpensive Disks) levels 1-5 configured as per statements in the Detailed Electronic Specification.

The operating systems auxiliary applications, games and email applications shall be password protected to Admin level to prevent misuse of the SCADA servers and workstation computers.

The latest virus protection package certified by the SCADA vendor shall be installed and shall be supplied with an annual update option unless otherwise stated in the Detailed Electronic Specification.

All software shall be supplied in original media packaging complete with the latest service packs and valid license certificates.

3.2.1.2 SCADA Software

Mhlathuze Water has an installed base of ADROIT SCADA in five of our pump stations and water treatment plants. Preferably Adroit SCADA package shall be supplied with **ADROIT SCADA intelligence software packages**. The software shall be sized for a minimum of 7500 number of Tags as well as the FDS requirements including 20% spare Tag capacity. **The SCADA application software as well as the user configured environment i.e. mimics, trends, alarms and custom made reports etc. shall be upgradable without having to replace the existing program.**

The architecture of the SCADA software shall be robust and modular and shall make maximum use of the operating systems multitasking and system services capabilities. All status and error events shall be written to the operating systems event log as well as the SCADA system event log.

A design and a run-time version of the SCADA software shall be provided such that the client can make changes to the SCADA mimics, face-plates and tag database and download these to the live system without having to restart the computers (i.e. on-the-fly changes).

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The SCADA software shall be client-server capable such that one or more SCADA server(s) can be configured with all mimics, graphics, alarms and events that can then be accessed and displayed on one or more client workstation(s).

The SCADA shall communicate with PLCs via an industrial type, high speed, and deterministic network and with other office computers and systems via standard Ethernet network. Serial communications protocols with the PLCs will not be acceptable. The SCADA system shall support data acquisition via OPC DA (version to be compatible with PLC version) and A&E (version to be compatible with PLC version).

3.3 Typical Modes Of Control

The software code in the PLC shall reflect the controlled equipment's wiring control circuit and the Employer's standard modes of control.

Software modules shall operate in two control modes, automatic and manual. The front-end control modules for motors, valves etc. shall be provided with an additional modes called maintenance and local modes. The PLC software module shall manage the mode selections so that each module is independently mode managed.

Automatic Mode:

A module that is selected auto shall be controlled by another software module, e.g. a control sequence, in the next control. Switching to auto mode shall be permissible at all times. All interlocks shall apply in this mode.

Manual Mode:

Manual mode shall only be selected by an Operator, from the HMI or SCADA. All interlocks shall apply in this mode. Manual mode selection shall be permissible at all times. If a manual operation is performed on a module, it shall automatically switch to manual mode. The module shall remain in manual mode until selected back to auto.

Maintenance Mode:

A front end control module can be selected to maintenance mode only when the equipment is de-energized and in manual mode. A sequence cannot run if one or more sub-ordinate modules are selected to maintenance mode. The maintenance selection may also be a 'process' type interlock on upstream equipment. Maintenance mode bypasses all process interlocks. Safety interlocks are still active. A Maintenance Mode request switches equipment between Manual and Maintenance Mode.

Field Control/Local Mode:

The field control mode allows for the control of equipment from a Field Control Panel situated somewhere in the facility, local to the equipment being controlled. An example of where this field control mode would apply would be valves, VSDs, ventilation fans, standby generators, etc.

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3.4 EQUIPMENT STATUS DISPLAY

All equipment controlled by the PLC, shall be represented by a dynamic, high quality graphic symbols of 1920 X 1080 resolution in the SCADA system.

The Graphic symbols shall reflect the equipment status via the following system colours as well as descriptive text;

TEXT	COLOR
Healthy (Auto/Man)	: White
Healthy (Field)	: Flashing White
Tripped	: Flashing Amber
Tripped Ack.	: Amber
Faulty	: Flashing Red
Faulty Ack	: Red
Running (Auto/Man)	: Green
Unknown (Comms Failure)	: Grey

Graphic symbols shall as far as possible reflect the ISA standard for Process and Instrumentation Diagrams.

3.4.1 PROCESS MIMICS

Process mimics shall be configured to represent the process flow as accurately as possible using standard ISA symbols. No more than 64 dynamic elements shall be allowed on any one screen and the dynamic update time per element shall be 2 seconds or better.

The mimic load time, from selection on menu or overview mimic to completely loaded and operational, shall not exceed 3 seconds.

All mimics shall conform to the standard screen layout as specified in the Functional Design Specification. No font smaller than 10point shall be used.

3.4.2 EQUIPMENT DISPLAY FACEPLATES

All motors, valves, actuators, measured values and controllers shall be represented by common, standard display faceplates as defined in the Functional Design Specification.

Faceplates shall clearly identify the operated equipment by its TAG number, description and clearly display equipment status, start/ stop, auto/manual, set-point adjustments and reset commands as required.

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An example of a PID faceplate is provided in Figure 1 below.

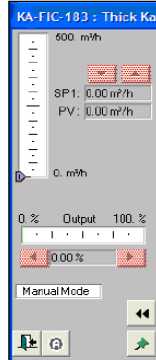


Figure 1: PID Controller Faceplate

3.4.3 HISTORICAL AND REAL TIME TRENDING

It shall be possible to configure any measured value or individual status signal for real-time or historical trending. The SCADA user should be able to select any tag to trend depending on the challenge at hand.

Real-time trending shall be configurable from as little as every 1second through to every hour. At least 8 trends per screen shall be allowed where each trend line shall have a different color and scale. The real-time trend data shall be maintained in memory and or relational database.

Measured values shall be normalized in a range of 0 to 10 000 when sent or received from a PLC and shall be individually scalable in any required engineering range for trending purposes.

Digital trend data shall be logged on a change of state basis.

Historical trends (Data Logging) shall be written to and read from either disk file or relational database. Intelligent archiving must be used to optimize disk space usage.

3.4.4 ALARMS AND EVENTS

All alarming functionality to be implemented shall comply with the EEMUA Best Practise Guidelines as well as the ISA 18.2 Alarm Management Standards.

A comprehensive Alarm and Event functionality shall be provided by the SCADA system. Alarms and Events shall be viewable from a separate screen and the last 5 alarms or events shall be visible at the top/bottom of every mimic.

State changes from any motor, valve, actuator, measured value, controller, set point or individual status bit shall be configurable for alarming and / or event logging.

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The alarm screen shall provide color-coded "in-coming" (new), "acknowledged" and "out-going" (cleared) alarms similar to the colors described in the modes of operation. New alarms shall be latched until acknowledged. Acknowledged alarms shall be cleared only once the field condition has been rectified.

There shall be a minimum of three classifications of alarms:

- Event: An event has occurred in the system that is not an alarm condition for the operators. An example of this would be equipment starting / stopping or a valve opening / closing.
- Warning: A condition has occurred that warrants operator intervention, however poses no immediate threat to production.
- Urgent: A condition has occurred that warrants operator intervention and poses a real threat to the facility.

The following shall be freely configurable:

- Alarm priorities
- Alarm categories
- Operator input downtime reasons and notes

Alarm and event lists shall be fully sortable, searchable and provide filtering functionality. Sorting shall be typically by the Alarm or Events date and time stamp, filtering shall be typically by area and or Tag number.

It shall be possible to configure alarms for automatic printing to either hardcopy or software (PDF) file format. Non-sensible alarms shall be suppressed at the lowest control level in the event of communications or power failures where it will be known that large numbers of controlled equipment may raise unnecessary alarms. Alarms shall NOT be generated for equipment that is *Out Of Service*.

NOTE: Measured value alarms shall be date and time stamped in the PLC and not the SCADA system.

Option for alarm/event SMS's to be sent out with different escalation levels is required.

3.4.5 CALCULATIONS AND STATISTICAL ANALYSIS

The SCADA system shall natively perform a wide variety of mathematical, logical, statistical and similar functions on measured values or individual status bits.

Calculation and logical functions should be configurable to run real-time, event triggered or at scheduled intervals.

In addition to Calculations and Functions, application scripting shall be provided as an add-on feature.

3.4.6 SCADA REPORTING

The SCADA system shall natively provide SCADA intelligence with custom made reporting. On demand and scheduled reporting shall be provided. Reports should be configurable in the same manner as display mimics and should be printable on demand, event triggered or at scheduled intervals as per user requirement.

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The report printing functionality shall be adequately threaded and multitasked such that it does not interfere with or hold up the regular updates of mimic dynamic elements and/ or SCADA to PLC data communications.

Reports shall be produced in a portable file format that can easily be imported to spreadsheet programs or presentation programs.

3.4.7 DATABASE MANAGEMENT SYSTEM

The SCADA package shall be supplied with a SQL Database including all servers, Client Access licenses (CALs) and application software for long term historical logging and archiving.

Preference shall be given to SCADA systems that use any of the common, industry standards, off the shelf, open Relational Database Management Systems.

The Database shall be normalized and optimized for the total number of measured values and status bits retrieved from the PLC's.

The Database shall be automatically backed-up and archived and shall be fully restorable in the event of a SCADA or computer failure. Database file sizes of up to **2TB** shall be supported.

3.4.8 SCADA OPERATOR SECURITY

The SCADA system security shall comply with Mhlathuze Water IT Policy, which will be issued together with the appointment letter. The SCADA system shall provide access security to prevent unauthorised access to the system. Securing the system through usernames and passwords shall prevent accidental reconfiguration and provide a traceable log of all SCADA activity.

At least three levels of security shall be provided. The SCADA Operating System security groups should be created (as a minimum):

3.4.8.1 Process Controllers:

The process controllers must logon to be able to perform their functions as follows:

- Move from mimic to mimic.
- Stop, start and reset all equipment.
- Change value settings.
- Acknowledge alarms.
- Reconfigure TREND periods.
- Print TRENDS

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3.4.8.2 System Managers:

In addition to the permissions of process controllers, the system managers must be able to perform the following functions:

- View the EVENTS list.
- Reconfigure the EVENTS list.
- Print the EVENTS list.

3.8.4.3 System Administrators:

Administrators will have access to all SCADA design time/ configuration menu items and functionality.

3.9 SCADA CYBER SECURITY

To ensure the highest degree of security of SCADA systems, the Contractor shall isolate the SCADA network from any other network connections. Any connection to another network introduces security risks, particularly if the connection creates a pathway from or to the Internet. Although direct connections with other networks may allow important information to be passed efficiently and conveniently, insecure connections are not acceptable; isolation of the SCADA network is the primary goal.

Strategies such as utilization of “demilitarized zones” (DMZs) and data warehousing are acceptable strategies to facilitate the secure transfer of data from the SCADA network to business networks.

The Contractor shall remove or disable unused services and network daemons to reduce the risk of direct attack. This is particularly important when SCADA networks are interconnected with other networks. Examples of services to remove from SCADA networks include automated meter reading/remote billing systems, email services, and Internet access. An example of a feature to disable is remote maintenance.

Where backdoors or vendor connections are required in the SCADA system, strong authentication must be implemented to ensure secure communications. Modems, wireless, and wired networks used for communications and maintenance represent a significant vulnerability to the SCADA network and remote sites and, as such, shall be assessed for intrusion and attack.

The Contractor shall establish and provide disaster recovery plan that allows for rapid recovery from any emergency (including a cyber-attack). System backups are an essential part of any plan and shall allow rapid reconstruction of the network.

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3.10 SCADA SYSTEM INSTALLATION

The SCADA servers and network equipment shall be permanently installed in a custom standard 19" rack mount equipment cabinet (typically 24U high) with glass doors and shelves as per industry norm.

The SCADA workstation computers shall be permanently installed in custom control desks.

The workstation control desk and equipment cabinet shall be suitably ventilated with filtered air.

All power, peripheral and network cabling shall be neatly arranged and tied back with cable ties. Where cabling has to run along floors, walls or ceilings, adequately sized PVC ducting shall be provided.

All electronic equipment shall be suitably earthed and protected against lightning, power failures and voltage dips/surges. Where power requirements of any of the equipment exceed 5A, suitable circuit breakers shall be supplied in a UPS distribution board.

All power supplied from the UPS shall be via coded, red flat top earth 15A plugs and sockets.

The SCADA computers and peripherals shall also be protected from electromagnetic radiation that could typically radiate from two-way radios used by the operators in the control room.

3.11 INSPECTION AND METHOD OF TESTING

The SCADA shall be inspected by the Project Manager and tested by the Contractor prior to delivery, installation and switch on at site.

The Contractor shall have all equipment available to do all tests. Any additional equipment required for the tests shall be obtained by the Contractor and remains the Contractor's property.

The Project Manager reserves the right to inspect any equipment covered by this Specification at any stage during manufacture.

A test report template shall be submitted with the tender detailing exactly which tests will be made, and how they will be performed. After testing at the system integrators offices, one original and one copy of the official test report shall be submitted to the Project Manager.

Should the Project Manager, when called upon to witness tests and inspections, find that the Contractor has not made reasonably certain that the tests will be successful, he may cancel such tests and postpone them to a future date so that the Contractor can ascertain by pre-testing that the equipment to be tested will be of acceptable standards.

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Any such re-test expenses incurred by the Contractor and/or the Project Manager shall be borne by the Contractor.

Any equipment or workmanship found by the Project Manager to be of inferior quality during construction, erection, commissioning, or during the guarantee periods, shall be replaced promptly to an acceptable quality and standard, at the Contractor's expense.

The final acceptance tests shall be undertaken after completion of the full installation on site.

3.12 MINIMUM INSPECTIONS AND TESTS

The minimum inspection of the SCADA shall include the following:

- Correct choice of PCs CPU, Motherboard and all components.
- Correct and neat assembly of all components.
- Correct configuration of the PCs BIOS.
- Correct installation and configuration of the Operating System.
- Review of all SCADA software configuration.

The minimum testing of the SCADA shall include the following:

- Correct thin slice operation of all SCADA faceplates and objects
- Correct operation of all Mimics and Dynamic Elements.
- Correct operation of all Modes of Operation.
- Correct detection and annunciation of simulated Faults/ Alarms.
- Correct scaling, trending and logging of measured values.
- Correct PLC/ SCADA data communication.
- SCADA command and load time response measurements.
- PLC/ SCADA data communications response time measurement.

The preferred method of testing shall be using the actual SCADA hardware and software connected to a PLC system that will ultimately be delivered to site, set up in a simulated environment. Simulation of the process to be controlled shall be as simple and as cost effective as possible.

3.13 TRAINING

3.13.1 OPERATIONS TRAINING:

All operators shall be trained on the basic operation of the platform application. This would include the following items:

- Interaction with the control system under all modes of operation
- Use of the alarm system
- User of the event system

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- Use of the trend system
- Reports viewing and printing
- Recognition of abnormal control conditions such as forced values
- Responding to process/control upsets
- Understanding the display navigation design
- Retrieval of historical data
- Adjusting of set-points
- Adjusting modes and outputs
- Stating up the plant/sequences
- Stopping the plant/sequences
- Recognition of special equipment or devices operating in maintenance/local modes

3.13.2 MAINTENANCE TRAINING:

All maintenance persons shall be trained on the basic operation of the platform application. This would include the following items:

- Use of the SCADA system to accomplish required maintenance tasks
- Vendor documentation for SCADA hardware components
- Vendor documentation for SCADA configuration tools
- Management of change process covering the SCADA

3.13.3 ENGINEERING AND ADMINISTRATION TRAINING:

All Project Managers and Administration staff shall be trained on the basic operation of the platform application. This would include the following items:

- Use of the SCADA to accomplish Project Manager ing tasks
- Vendor documentation for SCADA hardware components
- Vendor documentation for SCADA configuration tools
- Familiarity with operations functionality
- Familiarity with diagnostics tools
- System back and recovery procedures
- SCADA security and how SCADA user account and user privileges are to be used
- Management of change process covering the SCADA
- Performing SCADA backups
- Any necessary periodic review or update to software

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3.14 FIELD INSTRUMENTATION:

Calibration tests

Before Taking Over:

Check all rotating or moving equipment for correct and smooth operation.

Check and calibrate all items of plant for correct delivery and power consumption.

Check all controls for correct operation and functioning.

Check accuracy of measurements in conjunction with the Project Manager against known operating conditions such as emptying a sump, pumped flow of known values, etc. For certain of these tests, the Contractor will have to make temporary recording facilities available for the instrument/meters.

During Defects Liability Period:

Check all equipment for correct operation and functioning.

Check accuracy of measurement of all meters, as detailed above.

The entire cost of providing all test equipment must be borne by the Contractor, and an adequate allowance for such tests must be made in the tendered price for commissioning, testing and adjusting which is included in the Bill of Quantities where applicable.

3.15 COMPLETION AND TAKING OVER DATE

As soon as the Contractor has handed over all of the Plant and equipment that has been supplied, installed, satisfactorily tested, and commissioned as a complete unit in proper working order in accordance with the specifications and the General Conditions of Contract, a Certificate of Completion will be issued.

If any significant item(s) of plant or equipment fails to perform to the approval of the Project Manager and the Contractor is unable, within one month of the prescribed date, to rectify the matter, the Employer retains the right to reject the item(s) and to instruct the Contractor to remove, at his own cost, all such plant and/or equipment after refunding to the Employer any or all monies which may at that time have been paid to the Contractor or otherwise expended.

Hand-over will not be deemed to have taken place until:

a) The testing and commissioning report has been submitted and approved and,

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- b) The operating and maintenance manuals have been submitted and approved, and
- c) The certificate of compliance (electrical) has been submitted for MCCs installations,
- d) P&ID s have been submitted and approved, and
- e) All "as built" Electrical and Electronic drawings have been submitted and approved.

3.16 DEFECTS AND LIABILITY PERIOD

During the defects liability period the Contractor must visit the site at least three times, say 1, 6 and 12 months respectively after the commissioning date, to inspect and check all the plant supplied and installed by him for proper operation and to adjust where necessary, and to satisfy himself that the regular maintenance of the plant is being carried out correctly and in accordance with the written instructions supplied by him. Those written instructions should also contain a routine preventive maintenance schedule of significant plant operating parameters which the plant supervisor will be expected to attend to on a regular basis.

An item to enable Tenderers to price for these visits has been provided in the Bills of Quantities.

3.17 OPERATION AND MAINTENANCE INSTRUCTIONS

Operating and maintenance instructions are required for all new plant and equipment supplied and/or installed under this Contract. Such instructions shall be prepared by the Contractor and supplied as part of the contractual obligations. Quadruplicate copies of instructions shall be prepared and supplied by the Contractor to the Project Manager not less than four weeks before performance tests are conducted on the site. In addition to the schematic and other drawings in (.dwg) format; the SCADA PLC software and other related software required to configure new equipment supplied under this contract s shall be provided on a Compact Disk as soft copies for archiving purposes.

The instructions shall be made up in the form of one or more hard-covered books with rear pockets enclosing prints of all the drawings relevant to the Contract.

On the cover of each set of instructions for each Section of the Contract, the following information shall be indelibly printed in bold lettering:

3.18 INSPECTION, TESTS AND COMMISSIONING

- On completion of erection and installation on site the Contractor shall perform all the tests that may be required by the Project Manager in his presence to ensure that the Works are ready for handing over and putting into regular use.
- Near completion, inspect and test the services installation in accordance with the Wiring Code, the Regulations of the Supplier of Electricity and the Occupational Health and Safety Act 85/1993. Record test results on printed test sheets and submit to the Project Manager.

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- Testing of the electrical installation shall be in accordance with the Project Specification, but shall include but not limited to the following:
 - Ensure correct polarity, phase rotation and balance load between the phases. Verify polarity and phase identification.
 - Continuity and resistance of earth conductor including all bonding conductors.
 - Continuity of ring circuit.
 - Earth electrode resistance.
 - Insulating resistance.
 - Earth fault loop impedance test.
 - Operation of earth leakage protection devices and circuit breakers.
- After inspection and testing, timeously arrange for any inspection and test by the Supplier of Electricity if required, and assist as necessary the Inspector of the Supplier of Electricity by providing access, tools, instruments and attendance.
- Replace any portion of the electrical installation that does not comply with the Wiring Code or the Specification. Such replacement shall be done at the Contractor's expense.
- Submit a "Certificate of Compliance by an accredited person" Annexure 1 in terms of the Occupational Health and Safety Act 85/1993, Electrical Installation Regulation 1992, to the Project Manager.
- Carry out additional special tests as required by the Project Manager and provide the required test equipment.
- Timeously advise the Project Manager of all inspections and tests as the Project Manager reserves the right to witness such inspections and tests.
- Provide access, tools, instruments and attendance, to assist the Project Manager who may perform verification tests at any time.
- The Project Manager shall have the power at any time to examine any part of the Works or materials intended for use in or on the Works either on site, or at the place of manufacture or storage.
- On completion of the works, the Contractor shall submit four indexed volumes of all test certificates to the Project Manager for tests done at factories and on site. (To be included in the manuals).
- The Contractor shall be responsible to calculate all relay settings. The settings shall be submitted to the Project Manager for approval at least 2 weeks before the commissioning of the works commences. The settings shall be substantiated by calculation sheets and graphs where applicable.
- The Contractor shall check that all protection relays and overload devices are properly set to protect equipment such as motors, cables and capacitors etc., before the system is energised or any motors are switched on. Where overload devices are overrated or the ranges of relays insufficient to protect equipment, the Project Manager shall be informed and the equipment shall not be energised.

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3.19 Inspections, Tests And Commissioning With Reference To Material And Equipment

3.19.1 FACTORY TESTS AND INSPECTIONS

The manufacturer shall perform all routine tests in the factory as described by SABS, IEC and/or BSS as well as the manufacturers own standard routine tests on all materials, equipment and auxiliary equipment. Type tests shall be performed as described in the relevant equipment specifications.

The Contractor shall submit a list of tests and inspections to be performed on the equipment for approval.

The Contractor shall perform any additional standard tests that may be required by the Project Manager.

The Project Manager shall indicate which tests shall be witnessed by a representative of the Employer.

The Contractor shall submit four copies of the test certificates with the test results of all the tests performed to the Project Manager not later than the delivery date of the equipment.

3.19.2 SITE TESTS

On completion of erection and installation on site the Contractor shall perform all the tests that may be required to ensure that the Works are ready for handing over and putting into regular use.

Contractors shall provide their own test equipment which shall be of accepted standards.

The Contractor shall submit a list of tests and inspections to be performed on the equipment for approval.

The Contractor shall perform any additional standard test that may be required by the Project Manager.

All the tests shall be witnessed by a representative of the Project Manager.

Four copies of site test certificates shall be submitted to the Project Manager within 7 days after completion of each test.

3.19.3 ARRANGEMENTS FOR WITNESSING TESTS

The Contractor shall make arrangements with the Project Manager

Timeous (at least two weeks, or as specified in the Project Specification***) notice shall be given to avoid undue delays in the completion of tests.

Arrangements for tests on site shall be made only after the Contractor has pre-commissioned the equipment and satisfied himself that it is in running order.

4. SERVERS SPECIFICATIONS

a)2.2.1. Adroit Agent Servers and hot standby

Hardware	
Processor (CPU)	i7 or equivalent
HDD (C:\)	2TB

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Additional HDD (D:\)	2TB
Memory (RAM)	16 GB
Network card (NIC)	100 MB/s Full Duplex X 2
Display	
Other requirements	4 x USB 3.0 Virtual Serial Port (Com 1)
Software	Description
Operating system	Windows Server 2019
Adroit Smart UI	Adroit Smart UI version 10 with web service
Additional	Microsoft SQL Server 2016 Express .Net framework 3.5 – 4. IIS 6.0 or better ASP.net 3.5 and 4.7 Internet explorer 11
Ports	Adroit SmartUI – 9000 SQL Server – 1433 Reporting services – HTTP 80 Named Pipes - must be allowed through the firewalls and network

1.2.2. Engineers Station

Hardware	
Processor (CPU)	i7 or equivalent
HDD (C:\)	500 GB
Additional HDD (D:\)	500 GB
Memory (RAM)	16 GB

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Network card (NIC)	100 MB/s Full Duplex X 2
Display	
Other requirements	4 x USB 3.0 Virtual Serial Port (Com 1)
Software	Description
Operating system	Windows 10 Enterprise Microsoft office 365 (32 bit)
Adroit Smart UI	Adroit Smart UI version 10 with web service Adroit excel plugin
Additional	Microsoft SQL Server 2016 Express .Net framework 3.5 – 4. IIS 6.0 or better ASP.net 3.5 and 4.7 Internet explorer 11
Ports	Adroit SmartUI – 9000 SQL Server – 1433 Reporting services – HTTP 80 Named Pipes - must be allowed through the firewalls and network

1.2.3. Operator Interface

Hardware	Minimum
Processor (CPU)	i5 or equivalent
Hard drive (C :\)	120 GB
Memory (RAM)	4 GB
Network card (NIC)	100 MB/s Full duplex
WiFi Receiver	

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Display	HDMI 1920, 1080
Other requirements	4 x USB 3.0
Software	Description
Operating system	Windows 10 Enterprise
Adroit Smart UI	Adroit Smart UI Operator version 10
Additional	Office 2016 (32 bit) .Net framework 3.5 – 4. Internet explorer 11
Ports	Adroit SmartUI – 9000 SQL Server – 1433 Reporting services – HTTP 80 Named Pipes - must be allowed through the firewalls and network

5. GENERAL SUPPLIER/SERVICE PROVIDER OBLIGATIONS

- 3.1. The Supplier/Service provider(s) shall be fully responsible to Mhlathuze Water for the acts and omissions of persons directly or indirectly employed by them.
- 3.2. The Supplier/Service provider(s) must comply with the requirements stated in this RFP.

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NB: Evaluation of the various stages will normally take place in a sequential manner. However, in order to expedite the process, Mhlathuze Water reserves the right to conduct the different steps of the evaluation process in parallel. In such instances the evaluation of bidders at any given stage must not be interpreted to mean that bidders have necessarily passed any previous stage(s).

1.1 STEP ONE: Test for Administrative Responsiveness

The test for administrative responsiveness will include the following:

Administrative responsiveness check	RFP Reference
<ul style="list-style-type: none"> Whether the Bid has been lodged on time 	Section 2 paragraph 5
<ul style="list-style-type: none"> Whether all Returnable Documents and/or schedules [where applicable] were completed and returned by the closing date and time 	All Section
<ul style="list-style-type: none"> Verify if the Bid document has been duly signed by the authorised respondent 	All sections

1.2 STEP TWO: Test for Substantive Responsiveness to RFP

The test for substantive responsiveness to this RFP will include the following:

Check for substantive responsiveness	RFP Reference
<ul style="list-style-type: none"> Whether the Bid contains a priced offer as prescribed in the pricing and delivery schedule 	Section 4
<ul style="list-style-type: none"> Whether the Bid has submitted all technical returnables 	All Sections
<ul style="list-style-type: none"> Whether any Technical pre-qualification/eligibility criteria set by Mhlathuze Water have been met. Valid Letter from Original Equipment Manufacturer (OEM) confirming the tenderer is a Channel Partner for warranty purposes if the tenderer is not the OEM 	Eligibility Technical Criteria

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STEP THREE EVALUATION PROGRESS

1.3 STEP THREE: Minimum Threshold 50 points for Technical Criteria, The test for the Technical and Functional threshold will include the following:

Total Maximum Evaluation Points for the items is **70**.

The Pre-Qualification Criteria and maximum score in respect of each of the criteria are as follows and sufficient detail must be provided in experience sheets/support documentation attached to the Tenders for evaluation purposes.

Total maximum evaluation points for the items is **70**

The minimum number of evaluation points for Quality shall be **42 (60%)** below which value the tender shall be regarded as being non responsive.

Tenderers who will pass functionality, will then be evaluated on price per segment. Tenderers are encouraged to read instructions carefully on Bill of quantities, Section 4

Quality (Functionality) Sub criteria Maximum of Points Criteria	SUB CRITERIA	Maximum No
	Maximum Points	70
Experience in the industry	<p>1. Experience of the company in the supply, installation and commissioning of Rockwell Programmable Logic Controllers and ADROIT SCADA system work /contracts of similar nature within the last 10 years in the water sector</p> <ul style="list-style-type: none"> • Projects/ Contracts value of greater than R5 million 15 • Projects/ Contracts value greater than R1 Million up to R5 Million 10 • Projects/ Contracts value between R500 000 to R1 Million 5 <p>Note: Tenders must complete Schedule 12 in full detail, including the above information. Tenderers are to ensure that the referee's stamps schedule 12 or else the company experience points will not be allocated.</p> <p>Alternatively Positive written references by authorized signatory confirming successful performance on similar previous projects as listed in 1. above must be attached so as to claim points for the company experience. Failure to attached reference letters will result in no points being allocated.</p> <p>The reference letters must include the period, the value of the contract and a statement that indicates that the project was completed successfully.</p>	
	Maximum score	15
Key Personnel Qualification s and or Experience	<p>2. (a) Qualifications of <u>Project Manager</u> employed by company responsible for the project:</p> <ul style="list-style-type: none"> • Bachelor degree (NQF Level 7) in Electrical / Electronic Engineering field/s 10 • National Diploma (NQF Level 6) in Electrical / Electronic Engineering field/s 5 	

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	<p>(b) Experience of the Project Manager</p> <ul style="list-style-type: none"> Greater than 10 years relevant experience in Rockwell PLC and ADROIT SCADA installation and commissioning 15 Greater than 5 up to 10 years relevant experience in Rockwell PLC and ADROIT SCADA installation and commissioning 10 3 to 5 years relevant experience in Rockwell PLC and ADROIT SCADA installation and commissioning 5 <p>The Organogram or CV must indicate who will be fulfilling this role.</p>	
	Maximum score	25
	<p>3. Relevant experience of the Project Engineer / Technician who will be responsible for the installation and commissioning of Rockwell PLCs and ADROIT SCADA</p> <ul style="list-style-type: none"> Greater than 8 years relevant experience in the installation and commissioning Rockwell PLCs and ADROIT SCADA 15 Between 5 to 8 years relevant experience in the installation and commissioning Rockwell PLCs and ADROIT SCADA 10 Between 3 to 5 years relevant experience in VSD installation and commissioning 1 <p>The organogram or CVs must indicate who will be fulfilling these functions</p>	
	Maximum score	15
	<p>4. Location of the business:</p> <ul style="list-style-type: none"> Within the King Cetshwayo District Municipality, Zululand District Municipality, or the uMkhanyakude District Municipalities 15 Within KZN 10 Other Provinces 5 <p>Proof of location for the business in the form of rates bills or active lease agreement or a letter from the Traditional authority or Municipal councilor (Not older than 3 months)</p>	
	Maximum score	15

Tenderers who will pass functionality, will then be evaluated on price per segment. Tenderers are encouraged to read instructions carefully on Bill of quantities, Section 4

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1.4 STEP FOUR: Evaluation and Final Weighted Scoring

a) **Price and TCO Criteria** [Weighted score 80 points]:

Evaluation Criteria	RFP Reference
• Commercial offer	Section 4

Mhlathuze Water will utilise the following formula in its evaluation of Price:

$$PS = 80 \left(1 - \frac{Pt - Pmin}{Pmin} \right)$$

Where:

Ps = Score for the Bid under consideration
 Pt = Price of Bid under consideration
 $Pmin$ = Price of lowest acceptable Bid

b) **Broad-Based Black Economic Empowerment criteria** [Weighted score 20 points]

- B-BBEE - current scorecard / B-BBEE Preference Points Claims Form
- Preference points will be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table indicated in Section 4.1 of the B-BBEE Preference Points Claim Form.

1.5 SUMMARY: Applicable Thresholds and Final Evaluated Weightings

Thresholds	Minimum Threshold
Technical / functionality	50

Evaluation Criteria	Final Weighted Scores
Price and Total Cost of Ownership	80
B-BBEE - Scorecard	20
TOTAL SCORE:	100

1.6 STEP FIVE: Post Tender Negotiations (if applicable)

- Respondents are to note that Mhlathuze Water may not award a contract if the price offered is not market-related. In this regard, Mhlathuze Water reserves the right to engage in PTN with the view to achieving a market-related price or to cancel the tender. Negotiations will be done in a sequential manner i.e.:
 - first negotiate with the highest ranked bidder or cancel the bid, should such negotiations fail,
 - Negotiate with the 2nd and 3rd ranked bidders (if required) in a sequential manner.
- In the event of any Respondent being notified of such short-listed/preferred bidder status, his/her bid, as well as any subsequent negotiated best and final offers (BAFO), will automatically

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be deemed to remain valid during the negotiation period and until the ultimate award of business.

- Should Mhlathuze Water conduct post tender negotiations, Respondents will be requested to provide their best and final offers to Mhlathuze Water based on such negotiations. Where a market related price has been achieved through negotiation, the contract will be awarded to the successful Respondent(s).

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Compulsory Returnable

SECTION 4. PRICING AND DELIVERY SCHEDULE

ITEM	DESCRIPTION	
	<p><u>13 Supply, Installation and Commissioning of A-Line PLC and specified equipment</u></p> <p><u>Objectives:</u></p> <p>To supply, install and commission Rockwell PLC or equivalent and specified equipment for A-line</p>	
1.	<u>AS built drawings</u>	R
1.1	Preparation of As Built Drawings, for all Electrical and Electronic Works	
1.2	Preparation of Operating and Maintenance Manuals for all Electrical and Electronic Works	
1.3	Provision of Certificates of Compliance	
1.4	Provision of drawings, P&IDs, MCC's, SLDs and wiring diagrams as soft copies on DVD	
1.5	Provision of Operations and Maintenance Manuals as soft copies on DVDs	
1.6	Control Network Architecture Drawings for the pump station	
1.7	FDS Preparation	
2.	Supply	R

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2.1	Programmable Logic Controller, including all required power supplies, I/O, comms module, network switch, fused terminal blocks, surge protection devices, terminal blocks, interposing relays, wiring and all other required accessories for complete PLC panel	
2.2	4 X 250kW, 380VAC, 400A VSDs to drive A-line pumps	
2.3	Instrumentation cabling from A-line field instrumentation to PLC panel	
2.4	Electrical cabling between VSDs and Motors	
2.5	19" Panel mount industrial PC for Local control	
2.6	5KVA stand-alone UPS	
2.7	Consumables	
3.	<u>Engineering</u>	R
3.1	PLC programming	
3.2	SCADA programming	
3.3	Industrial PC programming	
3.4	Factory Acceptance Test	
3.5	Site Acceptance Test	
3.6	Installation	
3.7	Commissioning	
	Total	

Note 1: No other form of the BOQ will be accepted, all tenderers must complete above BOQ.

SIGNATURE: _____
(On behalf of the Tenderer)

DATE: _____

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2.1.2 C-Line PLC

ITEM	DESCRIPTION	
	<p>14 <u>Supply, Installation and Commissioning of C-Line PLC</u></p> <p><u>Objectives:</u></p> <p>To replace the current ABB ACM800 PLC with Rockwell control logix PLC or equivalent</p>	
1.	<u>AS built drawings</u>	R
1.1	Preparation of As Built Drawings, for all Electrical and Electronic Works	
1.2	Preparation of Operating and Maintenance Manuals for all Electrical and Electronic Works	
1.3	Provision of Certificates of Compliance	
1.4	Provision of drawings, P&IDs, MCC's, SLDs and wiring diagrams as soft copies on DVD	
1.5	Provision of Operations and Maintenance Manuals as soft copies on DVDs	
1.6	Control Network Architecture Drawings	
1.7	FDS Preparation	
2.	Supply	R
2.1	Programmable Logic Controller, including all required power supplies, I/O, comms module, network switch, fused terminal blocks, surge protection devices, terminal blocks, interposing relays, wiring and all other required accessories for complete PLC panel	

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2.2	Instrumentation cabling from C-line field instrumentation to PLC panel where necessary	
2.3	19" Panel mount industrial PC for Local control	
2.4	Consumables	
3.	<u>Engineering</u>	R
3.1	PLC programming	
3.2	SCADA programming	
3.3	Industrial PC programming	
3.4	Factory Acceptance Test	
3.5	Site Acceptance Test	
3.6	Installation	
3.7	Commissioning	
	Total	

Note 2: No other form of the BOQ will be accepted, all tenderers must complete above BOQ.

SIGNATURE: _____
(On behalf of the Tenderer)

DATE: _____

2.1.3 WWDS SCADA

ITEM	DESCRIPTION	
	<p><u>15 Supply, programming, Installation and Commissioning of ADROIT SCADA version 10 or equivalent</u></p> <p><u>Objectives:</u></p> <p>To supply, program, install and commission ADROIT SCADA with Adroit Scada Intelligence (Alarm Management and</p>	

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	reporting suite with separate historian server) or equivalent	
1.	<u>Supply</u>	R
1.1	SCADA application softwares and licenses	
1.2	SCADA server cabinet, including all accessories	
1.3	SCADA server plus Hotstandby	
1.4	Historian server	
1.5	SCADA switch	
1.6	Separate Engineering workstation where all A and C-Line PLC software and live SCADA backups will be installed	
1.7	ASI Package and licence	
1.8	SCADA Alarm Management Package and licence	
1.9	SCADA database application software and licences	
1.10	Server Operating System Software	
1.11	Workstation PC Operating Software	
1.12	1 X Workstation PC	
1.13	Consumables	
2.	<u>Engineering</u>	R
2.1	Development of SCADA mimics	
2.2	Development of SCADA trends	
2.3	Development of customized SCADA reports	

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2.4	Development of SCADA Overview Mimics	
2.5	FDS Preparation	
2.6	Thin Slice Testing	
2.7	commissioning	
	Total	

Note 3: No other form of the BOQ will be accepted, all tenderers must complete above BOQ.

SIGNATURE: _____
(On behalf of the Tenderer)

DATE: _____

2.1.4 ELPRO Telemetry interfacing to the SCADA

ITEM	DESCRIPTION	
	16 <u>Interface existing Elpro Telemetry for Collecting Chamber, Surge Tower 1, Surge Tower 2 and Alkanstrand Base station to the new SCADA</u> <u>Objectives:</u> To interface the existing Elpro Telemetry to the new SCADA	
1.	<u>AS built drawings</u>	R
1.1	Preparation of As Built Drawings, for all Telemetry sites	
1.2	Telemetry Control Network Architecture Drawings for all remote sites	
2.	<u>Engineering</u>	R
3.1	SCADA mimics development for all telemetry remote sites	
3.2	Telemetry interface to the SCADA	

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3.3	Testing of each remote signal	
3.4	Site Acceptance Test	
3.5	Commissioning	
	Total	

Note 4: No other form of the BOQ will be accepted, all tenderers must complete above BOQ.

SIGNATURE: _____
(On behalf of the Tenderer)

DATE: _____

2.1.5 TRAINING PROVISION BY PLC, HMI and SCADA OEMS FOR AUTOMATION PERSONNEL

ITEM	DESCRIPTION	
	<u>17 Training by PLC and SCADA supplied OEMs of Automation section personnel</u> <u>Objectives:</u> To incorporate training requirements for Automation personnel by OEMs of PLC and SCADA supplied and by the service provider on the specific solution supplied to ensure proper skills transfer between the service provider and MW Automation personnel to ensure plant availability.	
1.	<u>PLC</u>	R
1.1	Training of 3 people	
1.2	Travelling and accommodation including meals of 3 people	
2.	<u>SCADA</u>	R
2.1	SCADA training of 3 people	

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2.2	Travelling and accommodation including meals of 3 people	
	Total	

Note 5: No other form of the BOQ will be accepted, all tenderers must complete above BOQ.

SIGNATURE: _____
(On behalf of the Tenderer)

DATE: _____

2.1.6 NSEZI WTP SCADA

ITEM	DESCRIPTION	
	18 <u>Scada intelligence implementation at NSezi WTW</u> <u>Objectives:</u> To supply, install and commission Adroit SCADA intelligence at Nsezi WTW current SCADA system and to automate chemical dosing process.	
1	<u>Supply</u>	R
1.1	SCADA intelligence software and license	
1.2	SCADA alarm management software and license	
1.3	Performance anywhere software and licence	
1.4	Adroit air latest version mobile app	
1.5	Configuration of the entire system	
1.6	Configuration of spare server into hot standby server	
1.7	Engineering PC, monitor, keyboard and mouse	

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1.8	2 X control room monitors	
1.9	Studio 5000 version 32 and Factorytalk view software and licence	
2	<u>Engineering</u>	R
2.1	PLC programming editions for the entire project	
2.2	Chemical dosing automation (PLC work)	
2.3	Installation of Studio 5000 and Factorytalk view software and all Nsezi wtw PLCs and HMI backups	
2.4	Factory Acceptance Test	
2.5	Site Acceptance Test	
2.6	Implementation of Nsezi WTW SCADA review document which will be supplied on the tender briefing (this is for automating chemical dosing processes and existing graphics modification)	
2.7	Commissioning	
	Total (2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5 & 2.1.6)	
	VAT	
	Total VAT incl	

Note 6: No other form of the BOQ will be accepted, all tenderers must complete above BOQ.

SIGNATURE: _____
(On behalf of the Tenderer)

DATE: _____

Notes to Pricing:

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- a) Respondents are to note that if the price offered by the highest scoring bidder is not market-related, Mhlathuze Water may not award the contract to that Respondent. Mhlathuze Water may-
- (i) Negotiate a market-related price with the Respondent scoring the highest points or cancel the RFP;
 - (ii) if that Respondent does not agree to a market-related price, negotiate a market-related price with the Respondent scoring the second highest points or cancel the RFP;
 - (iii) if the Respondent scoring the second highest points does not agree to a market-related price, negotiate a market-related price with the Respondent scoring the third highest points or cancel the RFP.
- If a market-related price is not agreed with the Respondent scoring the third highest points, Mhlathuze Water must cancel the RFP.
- b) Prices must be quoted in South African Rand inclusive of VAT.
- c) Any disbursement not specifically priced for will not be considered/accepted by Mhlathuze Water.
- d) To facilitate like-for-like comparison bidders must submit pricing strictly in accordance with this pricing schedule and not utilise a different format. Deviation from this pricing schedule could result in a bid being declared non-responsive
- e) Quantities given are estimates only. Any orders resulting from this RFP will be on an "as and when required" basis.
- f) Prices are to be quoted on a delivered basis to
- g) Please note that should you have offered a discounted price(s), Mhlathuze Water will only consider such price discount(s) in the final evaluation stage if offered on an unconditional basis.
- h) Respondents, if awarded the contract, are required to indicate that their prices quoted would be kept firm and fixed a period of 12 months, subject thereafter to adjustment (i.e. after the initial period of 12 months), utilizing the following price index/indices/adjustment formula. [Not to be confused with bid validity period Section 2, clause 1]

.....

.....

YES	

RETURNABLE DOCUMENTS

Respondents are urged to ensure that these documents are returned with their bids based on the consequences of non-submission as indicated below:

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MANDATORY DOCUMENTS FOR TEST FOR ADMINISTRATIVE RESPONSIVENESS

Description	Submitted YES / NO
1. Proof of company registration documents	
2. Proof of Registration with SARS (Valid PIN from SARS confirming compliance status)	
3. Certified copies of Identity Documents of Shareholders/Members/Directors of the business (not applicable if a company is a 100 % subsidiary)	
4. A certified copy of Partnership Agreement(if tenderer is a partnership or JV)	

Returnable Documents Used for Scoring

5. Certified valid copy of BBBEE Certificate or a sworn affidavit if company is an EME or QSE.	
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Technical Eligibility

Schedule No.	Description	Submitted YES / NO
6	Valid Letter from Original Equipment Manufacturer (OEM) confirming the tenderer is a Channel Partner for warranty purposes if the tenderer is not the OEM	
7	CV of key Personnel with valid qualifications certificate/s	
8	COID's Letter of Good Standing	
9	Organogram reflecting key personnel	
10	Reference letters from previous employers for VSD supply, installation and commissioning related work	
11	Proof of certification by the OEM for the key personnel who will do the installation and commissioning of the VSDs.	
12	12 months warranty / DEFECTS AND LIABILITY PERIOD and technical support is mandatory and to be part of the documentation that VSDs will be delivered with to Mhlathuze Water.	

Failure to provide all Returnable Eligibility Documents u by the closing date and time of this bid will not result in a Respondent's disqualification.

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SBD4

Essential Returnable

BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration

- 2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest¹ in the enterprise,
employed by the state? **YES/NO**

- 2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of State institution

¹ the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

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Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:

.....
.....

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract? **YES/NO**

2.3.1 If so, furnish particulars:

.....
.....

3 DECLARATION

I, the undersigned, (name)..... in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

- 3.1 I have read and I understand the contents of this disclosure;
- 3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
- 3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium² will not be construed as collusive bidding.
- 3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

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- 3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.
- 3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....

Signature

.....

Date

.....

Position

.....

Name of bidder

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Compulsory Returnable

CERTIFICATE OF ATTENDANCE AT SITE MEETING

This is to certify that (tenderer) _____
of (address) _____
_____ was represented by the person
named below at the compulsory meeting held for all tenderers at (location) _____
_____ on (date) _____ starting at (time) _____

I acknowledge that the purpose of the meeting was to acquaint myself with the site of the works and / or matters incidental to doing the work specified in the tender documents in order for me to take account of everything necessary when compiling our rates and prices included in the tender.

Particulars of person attending the meeting:

Name: _____

Signature: _____

Capacity: _____

NOTE! Attendance Certificate to be signed by a representatives of Mhlathuze Water and to be stamped with Mhlathuze Water Supply Chain Management stamp.

The above person meeting attendance is confirmed by the Employer's representative, namely:

1. Name: _____ Capacity: _____

Signature: _____ Date: _____

2. Name : _____ Capacity: _____

Signature: _____ Date: _____

SCM STAMP:

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Essential

TAX COMPLIANCE STATUS LETTER REQUIREMENTS

Respondents must be compliant when submitting a proposal to Mhlathuze Water and remain compliant for the entire contract term with all applicable tax legislation, including but not limited to the Income Tax Act, 1962 (Act No. 58 of 1962) and Value Added Tax Act, 1991 (Act No. 89 of 1991).

It is a condition of this bid that the tax matters of the successful Respondents be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the Respondents tax obligations.

The Tax Compliance status requirements are also applicable to foreign Respondents/ individuals who wish to submit bids.

Where Consortia / Joint Ventures / Sub-contractors are involved, each party must be registered on the Central Supplier Database and their tax compliance status will be verified through the Central Supplier Database.

- Bidder must ensure compliance with their tax obligations
- Bidders are required to submit their unique personal identification number(pin) issued by SARS to enable the organ of state to verify the taxpayers' profile and status
- Application for Tax Compliance Status(TCS) pin may be made via- filling through the SARS www.sars.gov.za
- Bidders may also submit a printed TCS certificate with the bid
- In bids where consortia/ joint ventures/sub-contractors are involved, each party must submit a separate TCS certificate /pin//CSD number
- No bids will considered from person in the services of the state, companies with directors who are person in the service of state, or close corporations with members in the service of state

I ACCEPT THAT THE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPHY 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE OF IN THE SUPPLY CHAIN MANAGEMENT SYSTM SHOULD THIS DECLARATION PROVE TO BE FALSE

.....
Signature

.....
Date

.....
Position Name of bidder

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Essential Returnable

Authority to submit a Tender

Indicate the status of the tenderer by ticking the appropriate box hereunder. The tenderer must complete the certificate set out below for his category of organisation or alternatively attach a certified copy of a company / organisation document which provides the same information for the relevant category as requested here.

A - COMPANY	B - PARTNERSHIP	C - JOINT VENTURE	D - SOLE PROPRIETOR

A. Certificate for Company

I, _____ chairperson of the board of directors of
_____ hereby confirm that by
resolution
of the board taken on _____ (date), Mr/Ms _____ ,
_____ acting in the capacity of _____ ,
was authorised to sign all documents in connection with this tender offer and any contract resulting from it on
behalf of the company.

Signed _____ Date _____

Name _____ Position _____ Chairman of the Board of Directors

B. Certificate for Partnership

We, the undersigned, being the **key partners** in the business trading as _____
_____ hereby authorise _____ Mr/Ms,
_____ acting in the capacity of _____ , to sign all documents in connection with the
tender
offer for Contract _____ and any contract resulting from it on our
behalf.

Name	Address	Signature	Date

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NOTE: This certificate is to be completed and signed by the full number of Partners necessary to commit the Partnership. Attach additional pages if more space is required.

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C. Certificate for Joint Venture

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr/Ms _____
_____, an authorised signatory of the company _____
acting in the capacity of lead partner, to sign all documents in connection with the tender offer for Contract:
_____ and any contract resulting from it on our behalf.

This authorisation is evidenced by the attached power of attorney signed by legally authorised signatories of all the partners to the Joint Venture.

Furthermore we attach to this Schedule a copy of the joint venture agreement which incorporates a statement that all partners are liable jointly and severally for the execution of the contract and that the lead partner is authorised to incur liabilities, receive instructions and payments and be responsible for the entire execution of the contract for and on behalf of any and all the partners.

Name of firm	Address	Authorising signature, name (in caps) and capacity

D. Certificate for Sole Proprietor

I, _____ hereby confirm that I am the sole owner of the business trading as

Signed	_____	Date	_____
Name	_____	Position	Sole Proprietor

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Essential

B-BBEE

**PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT
REGULATIONS 2017.**

This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution

NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017.

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to all bids:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included)

1.2

a) The value of this bid is estimated to not exceed R50 000 000 (all applicable taxes included) and therefore the **...80/20.....** preference point system shall be applicable; or

1.3 Points for this bid shall be awarded for:

- (a) Price; and
- (b) B-BBEE Status Level of Contributor.

The maximum points for this bid are allocated as follows:

	POINTS
PRICE	80
B-BBEE STATUS LEVEL OF CONTRIBUTOR	20
Total points for Price and B-BBEE must not exceed	100

1.4 Failure on the part of a bidder to submit proof of B-BBEE Status level of contributor together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.

1.5 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

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2. DEFINITIONS

- (a) **"B-BBEE"** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (b) **"B-BBEE status level of contributor"** means the B-BBEE status of an entity in terms of a code of good practice on black economic empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (c) **"bid"** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals;
- (d) **"Broad-Based Black Economic Empowerment Act"** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (e) **"EME"** means an Exempted Micro Enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (f) **"functionality"** means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.
- (g) **"prices"** includes all applicable taxes less all unconditional discounts;
- (h) **"proof of B-BBEE status level of contributor"** means:
 - 1) B-BBEE Status level certificate issued by an authorized body or person;
 - 2) A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;
 - 3) Any other requirement prescribed in terms of the B-BBEE Act;
- (i) **"QSE"** means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (j) **"rand value"** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

3. POINTS AWARDED FOR PRICE

3.1 THE 80/20 PREFERENCE POINT SYSTEMS

A maximum of 80 points is allocated for price on the following basis:

80/20

$$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

P_s = Points scored for price of bid under consideration

P_t = Price of bid under consideration

P_{\min} = Price of lowest acceptable bid

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4. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTOR

- 4.1 In terms of Regulation 6 (2) and 7 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (80/20 system)
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

5. BID DECLARATION

- 5.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

6. B-BBEE STATUS LEVEL OF CONTRIBUTOR CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 4.1

- 6.1 B-BBEE Status Level of Contributor: . =(maximum of 10 or 20 points)
 (Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.

7. SUB-CONTRACTING

- 7.1 Will any portion of the contract be sub-contracted?

(*Tick applicable box*)

YES		NO	
-----	--	----	--

- 7.1.1 If yes, indicate:

- i) What percentage of the contract will be subcontracted.....%
- ii) The name of the sub-contractor.....
- iii) The B-BBEE status level of the sub-contractor.....
- iv) Whether the sub-contractor is an EME or QSE

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(Tick applicable box)

YES		NO	
-----	--	----	--

- v) Specify, by ticking the appropriate box, if subcontracting with an enterprise in terms of Preferential Procurement Regulations, 2017:

Designated Group: An EME or QSE which is at least 51% owned by:	EME	QSE
	✓	✓
Black people		
Black people who are youth		
Black people who are women		
Black people with disabilities		
Black people living in rural or underdeveloped areas or townships		
Cooperative owned by black people		
Black people who are military veterans		
OR		
Any EME		
Any QSE		

8. DECLARATION WITH REGARD TO COMPANY/FIRM

8.1 Name of company/firm:.....

8.2 VAT registration number:.....

8.3 Company registration number:.....

8.4 TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One person business/sole propriety
- ☐ Close corporation
- ☐ Company
- ☐ (Pty) Limited

[TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

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8.6 COMPANY CLASSIFICATION

- ☐ Manufacturer
- ☐ Supplier
- ☐ Professional service provider
- ☐ Other service providers, e.g. transporter, etc.

[*TICK APPLICABLE BOX*]

8.7 Total number of years the company/firm has been in business:.....

8.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contributor indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- iv) If the B-BBEE status level of contributor has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –
 - (a) disqualify the person from the bidding process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
 - (d) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
 - (e) forward the matter for criminal prosecution.

WITNESSES

- 1.
- 2.

.....
SIGNATURE(S) OF BIDDERS(S)

DATE:

ADDRESS

.....
.....

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Essential

**Certificate of Acquaintance with
Tender Documents**

NAME OF ENTITY:

1. I/we

do hereby certify that I/we acquainted myself/ourselves with all the documentation comprising this Tender and all conditions contained therein, as laid down by Mhlathuze Water for the carrying out of the proposed supply/service/works for which I/we submitted my/our Proposal.

2. I/we furthermore agree that Mhlathuze Water shall recognise no claim from me/us for relief based on an allegation that I/we overlooked any RFP/contract condition or failed to take it into account for the purpose of calculating my/our offered prices or otherwise.
3. I/we understand that the accompanying Bid will be disqualified if this Certificate is found not to be true and complete in every respect.
4. For the purposes of this Certificate and the accompanying Bid, I/we understand that the word "competitor" shall include any individual or organisation, other than the Bidder, whether or not affiliated with the Bidder, who:
 - a) has been requested to submit a Bid in response to this Bid invitation;
 - b) could potentially submit a Bid in response to this Bid invitation, based on their qualifications, abilities or experience; and
 - c) provides the same Services as the Bidder and/or is in the same line of business as the Bidder
5. The Bidder has arrived at the accompanying Bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive bidding.
6. In particular, without limiting the generality of paragraph 5 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
 - a) prices;
 - b) geographical area where Services will be rendered [market allocation];
 - c) methods, factors or formulas used to calculate prices;

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- d) the intention or decision to submit or not to submit, a Bid;
 - e) the submission of a Bid which does not meet the specifications and conditions of the RFP; or
 - f) bidding with the intention of not winning the Bid.
7. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the Services to which this RFP relates.
8. The terms of the accompanying Bid have not been, and will not be, disclosed by the Bidder, directly or indirectly, to any competitor, prior to the date and time of the official Bid opening or of the awarding of the contract.
9. I/We am/are aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, Bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and/or may be reported to the National Prosecuting Authority [NPA] for criminal investigation and/or may be restricted from conducting business with the public sector for a period not exceeding 10 [ten] years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

Signed	Date
_____	_____
Name	Position
_____	_____
Tenderer	

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Essential

Record of Addenda to Tender Documents

We confirm that the following communications received from the *Employer* before the submission of this tender offer, amending the tender documents, have been taken into account in this tender offer:

	Date	Title or Details
1		
2		
3		
4		
5		
6		
7		
8		
9		

Attach additional pages if more space is required.

Signed	_____	Date	_____
Name	_____	Position	_____
Tenderer	_____		

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Tender Clarification Request Form

Essential

RFP deadline for questions / RFP Clarifications: **Before 12h00 on Friday, 09 December 2022**

TO: Mhlathuze Water SCM

EMAIL: tenders@mhlathuze.co.za

DATE: _____

FROM: _____

RFP Clarification No/

REQUEST FOR RFP CLARIFICATION

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PROOF OF COMPANY REGISTRATION DOCUMENTS

[Attach copies here]

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PROOF OF REGISTRATION WITH SARS, (VALID PIN FROM SARS CONFIRMING COMPLIANCE STATUS)

[Attach copies here]

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**CERTIFIED COPIES OF ID DOCUMENTS OF SHAREHOLDERS / MEMBERS
/DIRECTORS OF THE BUSINESS.**

[Attach copies here]

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**A CERTIFIED COPY OF PARTNERSHIP AGREEMENT (IF TENDERER IS A
PARTNERSHIP OR JV)**

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PROOF OF COMPANY REGISTRATION WITH NATIONAL TREASURY CENTRAL
SUPPLIER DATABASE (CSD)

[Attach copies here]

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**PROOF OF CERTIFICATION BY THE OEM FOR THE KEY PERSONNEL WHO WILL DO THE
INSTALLATION AND COMMISSIONING OF THE VSIDS.**

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CERTIFIED VALID COPY OF BBBEE CERTIFICATE OR A SWORN AFFIDAVIT IF COMPANY IS AN
EME OR QSE. [ATTACH COPIES HERE]

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SCHEDULE 12 : SCHEDULE OF TENDERER'S REFERENCE CHECKS FOR PURPOSES OF TENDER EVALUATION

TENDERER to complete A, B & E before sending to referee:

<u>A : DETAILS OF TENDERER WHO IS ASKING FOR THE REFERENCE</u> <div style="border-bottom: 1px solid black; width: 80%; margin: 0 auto; height: 1.2em;"></div> <div style="border-bottom: 1px solid black; width: 80%; margin: 0 auto; height: 1.2em;"></div> <p style="text-align: center;">Full tenderer's name as it will appear on the Form of Offer</p>
<u>B : CONTACT DETAILS OF ORGANISATION / PERSON WHO IS PROVIDING THE REFERENCE (REFEREE)</u> <div style="border-bottom: 1px solid black; width: 80%; margin: 0 auto; height: 1.2em;"></div> <div style="border-bottom: 1px solid black; width: 80%; margin: 0 auto; height: 1.2em;"></div> <p style="text-align: center;">Full details of the organisation / person providing the reference</p>

<u>C : DETAILS OF THE TENDER WHICH IS CURRENTLY BEING PREPARED :</u> Contract Number : MW/22/2/2021/2022 Description : <i>SUPPLY, INSTALL AND COMMISSION VARIABLE SPEED DRIVES AT ALKANSTRAND WWDS C-LINE PUMP STATION</i> Estimated Performance Period 3 months		
<u>E : DETAILS OF THE CONTRACT WHICH WAS COMPLETED FOR THE ORGANISATION PROVIDING THE REFERENCE</u> Description : <div style="border-bottom: 1px solid black; width: 80%; margin: 0 auto; height: 1.2em;"></div> <div style="border-bottom: 1px solid black; width: 80%; margin: 0 auto; height: 1.2em;"></div>		
Date completed :	/	Value on completion : R
		Incl. VAT
F : Ratings on aspects below on the performance of the tenderer (A above) on the contract / project (E above)	UNACCEPT- ABLE	ACCEPTABLE
Tenderer completed the work successfully and timeously		

MHLATHUZE WATER
CONTRACT NO. MW/20/11/2022/2023
SUPPLY, INSTALL AND COMMISSION ALKANSTRAND A & C-LINE PROGRAMMABLE LOGIC
CONTROLLERS, CENTRAL CONTROL ROOM SCADA SYSTEM AND SCADA INTELLIGENCE
IMPLEMENTATION AT NSEZI WTW ON EXISTING SCADA.

Signature : _____

DATE

:

COMPANY RELEVANT EXPERIENCE IN THE INDUSTRY (BASED ON EXPERIENCE SHEET)
Attach proof of experience

[illegible]

MHLATHUZE WATER
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REFERENCE LETTERS FROM PREVIOUS EMPLOYERS FOR VSD SUPPLY, INSTALLATION AND COMMISSIONING RELATED WORK

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CURRICULA VITAE: OF KEY PERSONEL WITH VALID QUALIFICATIONS CERTIFICATE/S
(Project Manager / VSD Engineer / VSD Technician).

[Attach copies here]

MHLATHUZE WATER
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**VALID LETTER FROM ORIGINAL EQUIPMENT MANUFACTURER (OEM) CONFIRMING THE
TENDERER IS A CHANNEL PARTNER FOR WARRANTY PURPOSES IF THE TENDERER IS NOT
THE OEM**

MHLATHUZE WATER
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COID's LETTER OF GOOD STANDING.

MHLATHUZE WATER
CONTRACT NO. MW/20/11/2022/2023

**SUPPLY, INSTALL AND COMMISSION ALKANSTRAND A & C-LINE PROGRAMMABLE LOGIC
CONTROLLERS, CENTRAL CONTROL ROOM SCADA SYSTEM AND SCADA INTELLIGENCE
IMPLEMENTATION AT NSEZI WTW ON EXISTING SCADA.**

**12 MONTHS WARRANTY / DEFECTS AND LIABILITY PERIOD AND TECHNICAL SUPPORT IS
MANDATORY AND TO BE PART OF THE DOCUMENTATION THAT VSIDS WILL BE DELIVERED
WITH TO MHLATHUZE WATER.**

MHLATHUZE WATER
CONTRACT NO. MW/20/11/2022/2023

**SUPPLY, INSTALL AND COMMISSION ALKANSTRAND A & C-LINE PROGRAMMABLE LOGIC
CONTROLLERS, CENTRAL CONTROL ROOM SCADA SYSTEM AND SCADA INTELLIGENCE
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FORM OF OFFER AND ACCEPTANCE

OFFER

The Purchaser, identified in the Acceptance signature block, has solicited offers to enter into a contract in respect of the following works:

.....
.....

The Tenderer, identified in the Offer signature block below, has examined the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, and by submitting this Offer has accepted the Conditions of Tender.

By the representative of the Tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance, the Tenderer offers to perform all of the obligations and liabilities of the Contractor under the Contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the Conditions of Contract identified in the Contract Data.

THE OFFERED TOTAL OF THE PRICES INCLUSIVE OF VALUE ADDED TAX IS

Main Offer:

..... (in words); R(in figures) and

This Offer may be accepted by the Purchaser by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document to the Tenderer before the end of the period of validity stated in the Tender Data, whereupon the Tenderer becomes the party named as the Supplier in the Conditions of Contract identified in the Contract Data.

Signatures _____

Name(s) _____

Capacity _____

MHLATHUZE WATER
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Date _____

for the Tenderer _____

Names & signatures of witnesses

Signatures _____

Name(s) _____

Date _____

MHLATHUZE WATER
CONTRACT NO. MW/20/11/2022/2023

**SUPPLY, INSTALL AND COMMISSION ALKANSTRAND A & C-LINE PROGRAMMABLE LOGIC
CONTROLLERS, CENTRAL CONTROL ROOM SCADA SYSTEM AND SCADA INTELLIGENCE
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